

THIS is a complete list of the birds seen in and about Delhi with interesting notes by Major General Hutson on those observed by him during the years 1943-45 when he was Deputy Engineer-in-Chief at General Headquarters. His list has been brought up to date from the records of the Delhi Bird Watching Society, and brief notes on the remaining species added by Horace Alexander.

General Hutson found recreation in bird watching from the strain of war work in Delhi. This book will, it is hoped, stimulate interest in bird watching and bring equal relaxation to those who, in one capacity or another, live and work in the capital of the Republic of India. It should prove a useful reference book to every bird lover.

Rs. 5/-
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THE BIRDS ABOUT DELHI

TOGETHER WITH
A COMPLETE LIST OF BIRDS OBSERVED IN DELHI
AND THE SURROUNDING COUNTRY

BY

Major-General H. P. W. HUTSON, C.B., D.S.O., O.B.E., M.C.

FIRST EDITION

COMPILED WITH A SHORT PREFACE BY
Major-General H. WILLIAMS, C.B., C.B.E.

THE DELHI BIRD WATCHING SOCIETY
1954

PREFACE

In 1952 Major-General Hutson sent the Delhi Bird Watching Society his notes on 'The Birds About Delhi,' together with a list compiled from observations during two seasons June 1943 to May 1945. With his permission and, with a view to stimulating others to observe the bird-life of Delhi and the surrounding country, the Society decided to publish his notes, including at the same time brief information on the other birds now in the Delhi Bird List.

Accordingly, in the following pages will be found an Introduction written by General Hutson with a short additional note on migration, followed by the complete Delhi Bird List with notes by General Hutson on the birds he observed, and very brief notes on the remainder by H. G. Alexander.

The first attempt at a systematic list of Delhi birds appears to be that published by S. Basil-Edwardes in the Journal of the Bombay Natural History Society in 1926 (Vol. XXXI, pp. 261-73 & 567-78). This was based on observations made during the winter months only. In December 1947, Sir N. F. Frome published a further paper (J.B.N.H.S. Vol. XLVII, pp. 277-300) based on observations made by himself and others during some fifteen years, including all known records within thirty miles of Delhi to that date. The Editor of the Journal inserted some additional notes based on the list prepared by Major General Hutson and, in subsequent numbers of the Journal, a few further notes were sent by Sir Edward Benthall, H. G. Alexander and others.

In recent years, various members of the Delhi Bird Watching Society, including Capt. H. C. Ranald R.N., F. C. Badhwar, C. J. L. Stokoe, Lav Kumar, A. Herbert and L. Harrison have added to the list which now includes some 370 species.

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Set in 10 pt Monotype Times New Roman
and printed at the
College of Military Engineering, Kirkee, India

The preparation of these notes for the press has been done during the limited spare time which the rather busy official life of New Delhi allows, and so inevitably mistakes have crept in and for those the compiler alone is responsible and asks the reader's forbearance.

The Society's thanks are due to Major-General Hutson for his generosity in placing his notes at its disposal, to Horace Alexander for much help and advice in the subsequent compilation of the book, to Major Stiffle and Mary Mangat-Rai for doing the proof-reading and to M. L. Mullick who spent long hours in preparing the manuscript for the press.

A. Williams

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31. March. 1957

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Scelopax rusticola. Woodcock (HGA, 1950)

Arenaria interpres Turnstone

Najafgarh jheel 25.5.58
JG

Calidris testacea Curlew sandpiper

same date

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INTRODUCTION

The material for these notes was obtained during some 2½ years at General Headquarters India in the period 1943—45. It was a time when bird watching could only be undertaken during the limited hours allowed for recreation. For the first 12 months from June 1943, I had to confine my activities to ground within walking distance of my hostel in New Delhi. Fortunately, samples of most of the types of habitat occurring round Delhi were to be found within this range and the two most important omissions—rocky terrain and permanent water other than the river—were included later when I joined forces with a bird watcher owning a car. The restrictions of the first year had some compensating advantages. I could cover the ground within reach very thoroughly, and keep areas under sufficiently constant observation to note changes in their bird populations. No collecting was done. My identifications were by sight.

The Lodi Gardens, Lodi Golf Links and Aliganj Nursery were all within a few minutes walk of my quarters and, at the start, were the scenes of most of my watching. Gradually I worked further afield eastwards from the golf links; first to the Delhi-Agra railway and then on to the Jumna river and southwards between the railway and the Gurgaon road to Suraj Kund. I covered pretty thoroughly the riverain belt from Purana Qila to some four miles south of Okhla. Towards the end of my stay, I made several trips to the country north of Delhi between the Alipur road and the river. These trips did not extend more than 10 miles beyond the city.

THE DELHI LIST

The bird population of Delhi is a large one, both in the aggregate and by species. I identified with reasonable certainty over 250 species, and on several occasions met more than a 100 of these in a single day. About half the species seen were resident in the area, and rather more than a quarter of the remainder either visitors or on passage. The rest, which my records did not enable me to place in either of these categories, have been provisionally classified as vagrants.

RESIDENTS

About one hundred and thirty species were noted as being resident in the area under observation. Some twenty of these were classified as either scarce or occurring only in small numbers and the remainder as plentiful or, in some instances, numerous. The most common of all, in the sense of being so generally distributed that one could scarcely fail to see them in the course of a day, are probably the following species :—

House Crow (*Corvus splendens*)
 Large Grey Babbler (*Argya malcolmi*)
 Red-vented Bulbul (*Molpastes cafer*)
 Indian Robin (*Saxicoloides fulicata*)
 Common Mynah (*Acridotheres tristis*)
 Hoopoe (*Upupa epops*)
 Green Parrakeet (*Psittacula krameri*)
 Pariah Kite (*Milvus migrans*)
 Little Brown Dove (*Streptopelia senegalensis*)
 Indian Ring-Dove (*Streptopelia risoria*).

No other species are quite so catholic in their choice of habitat and their occurrences vary accordingly. The Bay-backed Shrike (*Lanius vittatus*) for instance is plentiful in parkland, thin woodland and in light scrub ; but is only occasionally seen in the garden and scarcely at all in the almost treeless corn land. The Tree-pie (*Dendrocitta vagabunda*), to give another example, is typically a bird of the gardens and woods ; it occurs commonly also in parkland but is absent from the light scrub and open cultivation. Perhaps the highest selectivity was that shown by the Striated Babbler (*Argya earlii*). One or two large reed beds by the river were the only places where it was seen.

With many species there were marked seasonal changes of habitat. They were not migrations, in the commonly accepted sense of the word, but were local moves either in search of nesting sites or after food. Thus Brahminy Mynahs (*Temenuchus pagodarum*) which had spent the cold weather in the scrub and waste land where their favourite food at this season, the pink fruits of the caper (*Capparis aphylla*) was plentiful, moved in the spring into the woods and parklands where they could find nesting holes in the trees. And even more noticeable was the change of ground by the King-Crows (*Dicrurus macrocerus*). All through the winter they had been in the open country, in attendance upon grazing cattle, about the freshly flooded

fields with the grass cutters or following the ploughs, anywhere indeed where insect life was being disturbed. Quite suddenly the King-Crows shifted their haunts and moved to the parkland country, to the more open woodlands and to the tree-bordered roads of New Delhi. In places where there had not been a King-Crow for four or five months, the species became one of the most familiar members of the bird community. As with the Brahminy, the motive behind this change of habitat was the need for nesting sites. These two

illustrations are not isolated examples ; many other species behaved similarly.

In some cases, instead of moving to a different type of habitat, a community would achieve its purpose by dispersion or thinning out. The Red-wattled Lapwings (*Lobivanellus indicus*) for instance scattered so that individual pairs could each secure a sufficient area for nesting. The Green Parrakeets (*Psittacula krameri*) broke up their bands and flocks seeking, not space so much as suitable nesting holes. Where these holes occurred plentifully and together, these Parrakeets would nest as a colony. The House Crows (*Corvus splendens*) also scatter for the breeding season, although once I did come upon what might have been described as a rookery. Some 50 pairs of House Crows had made their nests in trees extending about half a mile along a railway embankment. Tree colonial nesting as practised by the several species of Tern, by the Bank Mynahs (*Acridotheres ginginianus*), the Cliff-Swallows (*Hirundo fluvicola*), by Egrets and other birds usually meant a change of ground although the move might be only short. Many of the colonial nesting species had spent the winter in comparatively small parties. The Baya Weaver-birds (*Ploceus philippinus*) behaved rather exceptionally in that their nesting moves involved both concentration and dispersion. First the bands gathered. They came from the cultivation into the woodlands and built up large flocks which roosted together. Neither in size, nor in their location did these flocks seem related to any of the subsequent nesting colonies. Whilst in the flock stage the Weaver-birds assumed their breeding plumage, when the time for nesting arrived, the flocks broke up into a number of much smaller groups. This was necessary, since the nests were usually in palms which more often than not grew either singly or in small groups and so could not support more than a limited quantity of nests. It seemed that the non-breeding birds drew apart at the same time and formed communities of their own.

MIGRANTS

As far as my observation goes, Delhi is not a focal point or defile on any great migration route. Only four species — Rosy Pastor (*Pastor roseus*), Red-headed Bunting (*Emberiza bruniceps*), Blue-cheeked Bee-Eater (*Merops superciliosus persicus*) and Blue-tailed Bee-Eater (*Merops superciliosus javanicus*) — passed through in anything resembling a stream. With most of the other migrants there was little or no noticeable concentration. The impression I got was that these migrants arrived dispersed, and went on in the same manner. The Wagtails were partial exceptions. Both the White (*Motacilla alba*) and the Yellow Wagtails (*Motacilla flava*) did make their first appearance in flocks, although not of any great size. These flocks soon broke up into small parties and even individuals, and although there was a gathering again in reed-beds and cornfields before the return journey was started, it seemed that the Wagtails' move northwards was in the main a general drift by small bands. The chief clues to the comings and goings of the majority of the migrants were the reoccupation of old haunts, and absences from places previously frequented. At times, whilst some individuals of a species appeared to be stationary in a locality, others would be passing through. This was noticed with the Black Redstart (*Phenicurus ochrurus*) and also with the Grey-headed Flycatcher (*Culicicapa ceylonensis*). Some species — the Red-breasted Flycatcher (*Siphia parva*) was one — seemed to migrate in a succession of waves.

WINTER VISITORS

Winter visitors greatly outnumbered the summer ones, totalling at least 60 species as against ten. Easily the most generally distributed, and also the most conspicuous, were the Wagtails and the Black Redstarts. The latter showed no concentration in their coming or their departure. Their spread over the area was rapid. Within a day or two of the first comer being seen, all the accustomed haunts were taken up. Only for a very brief period were birds met in places which were not subsequently occupied. It may have been purely accidental that the spots where these Redstarts were seen in the first days of their arrival in the area were largely along its eastern edge. But there were similar indications, although nothing really definite, among the Wagtails and other species and, taken together,

one got the impression that the Jumna river was a migration route. At the end of August and, in early September when the winter visitors are arriving, the banks of the river in the vicinity of Delhi are flooded in many places and this must be so elsewhere along the Jumna's course. The flooded fields and swamps make good halting places for travelling birds, and about Delhi were certainly much used not only by the waders, which one would expect to find in such haunts, but by many other species as well. And, in the case of the Wagtails at any rate, it did seem that they took over their winter quarters by dispersing outwards from the river. The White Wagtails (*Motacilla alba*) spread most rapidly, possibly because their catholic tastes and individualistic tendencies made for scattering, whilst the Yellow Wagtails (*Motacilla flava*) and the Yellow-headed Wagtails (*Motacilla citreola*) both of which, and especially the latter, show a definite liking for moist places, lingered by the river and moved inland more slowly.

The move north commences in February and early March. Amongst the first to go were the Starlings (*Sturnus vulgaris*). They left suddenly and, so far as my own observations went, there was no corresponding passage of other Starlings from further south. In this respect the pattern of the Starling migration differed from that of most of other winter visitors. Nearly always birds from further south appeared and tended to go through those of their kind which had wintered in Delhi, these latter joining the tail of the migrating stream. One cannot be sure on this point. Much closer and more prolonged watching than my spare time allowed would be wanted to reach a dependable conclusion. It did seem, however, that particular haunts, which had been occupied all the winter, continued in use till the end. Whether the same individuals frequented the spot the whole time is, of course, open to question. But they may well have done so. And when these 'home' birds did go it was at or near the close of the passage of that species. A couple of White Wagtails in the compound of my hostel was one example of this. Another was a Black Redstart (*Phenicurus ochrurus*), a male bird, which kept closely to a pitch not much over 50 yards square. It was there on the 15th April, my last recorded date for the species. On the other hand, when Bluethroats (*Cyanosylvia svecica*) appeared in March among the sweet-pea beds in a New Delhi garden where not one of this sort had been seen the whole winter, it did not seem unreasonable to regard them as more likely to be birds on passage

from the south than one's own winter visitors making a last minute shift from their usual haunts which were half a mile or so away.

SUMMER VISITORS

Well before all the wintering birds were gone the summer visitors were arriving. Their coming was a very prolonged affair, beginning in early March with the Koel (*Eudynamis scolopaceus*) and continuing until mid-June when the Nightjars (*Caprimulgus asiaticus*) made their appearance. Not one of these summer visitors, except possibly the last, could escape notice for long. The Koel, the Hawk-Cuckoo (*Hierococcyx varius*) which followed a day or two later, the Golden Oriole (*Oriolus oriolus*), an April arrival, and the Pied Crested Cuckoo (*Clamator jacobinus*) which did not show up till June, all announced themselves loudly. There were noticeable differences, however, in the time each of these four species took to reach the full volume of its contribution to the bird 'song' of Delhi, and their differences were only in part attributable to the build-up of the numbers of the birds. Whereas every Hawk-Cuckoo seemed to begin calling as soon as it arrived, the Crested Cuckoos were silent for a day or two and the Pied Koels opened spasmodically. Weariness was apparently the cause of the Pied Crested Cuckoo's initial silence. The first birds I saw were obviously tired. You could walk up to them with ease. They were most reluctant to take wing. A day or two later their behaviour was altogether different. Filling the woodland with gay cries, they chased one another through the trees and were never still for long. Why were they so tired when they first reached Delhi? Had they come further or flown longer stages than the others? But the slowest of all to reach its full vocal volume was the Golden Oriole. Quite a week went by without even a first whistle being heard. After this, however, it was only a short while before the Oriole's flute-like notes were heard almost throughout the day along Delhi's tree-bordered roads.

In contrast with these noisy visitors, the Paradise Flycatcher (*Tchitrea paradisi*) made a silent debut as did also the Nightjar. The latter was seldom on the wing during light and, unless flushed by chance, could be overlooked. Not so the Paradise Flycatcher with its conspicuous plumage and especially during its first days before it had settled into some shady grove or nook. This Flycatcher incidentally is another species which may use the Jumna river as a

migration route. My earliest records of its arrival were on the river side of Delhi, and were in places moreover where the birds did not take up residence but merely passed through. And I think they went back the same way. My latest record of the Paradise Flycatcher on the 1st October was in a small isolated babool grove on the river bank.

PASSAGE MIGRANTS

11 species have been classed as passage migrants, rather doubtfully in some cases, as my records were too few for a sure determination of their status. Easily the most prominent of the passage migrants, by reason not only of their numbers and the regularity of their appearances, but also because of their conspicuous colouring, were the Rosy Pastors (*Pastor roseus*). They pass through Delhi on both migrations, the passage in each case continuing for about six weeks. In the spring the first Pastors appear about the second week in March; in the autumn the vanguard of the movement arrives at the end of July. None of the other passage migrants were so equally in evidence on both journeys. The Red-headed Buntings (*Emberiza bruniceps*) came through in large numbers in the spring just as the corn was ripening, but I saw nothing at all of their return.

The two Bee-Eaters, the Blue-cheeked (*Merops superciliosus persicus*) and the Blue-tailed (*Merops superciliosus javanicus*) were something of a puzzle. Both were away a comparatively brief period, from December to March. The former, which was much the more numerous, had passed southwards quite unhurriedly between August and mid-November keeping chiefly to the riverain country; the latter preferred more wooded areas, halting and hawking from tall tree-tops. But with neither of these species was I at all sure of the timing of the return journey in the spring. My only reliable records were of some parties of the Blue-cheeked Bee-Eaters at the end of May. Bee-Eaters too distant for identification were noticed overhead on one or two occasions from early April. The remaining two passage migrants on my list were the Short-eared Owls (*Asio flammeus*) which probably went through in March and April and the Quail (*Coturnix coturnix*) which I saw going north in the spring, but missed on the way back.

CASUALS AND VAGRANTS

Under this head I have included some 20 species, none of them seen sufficiently often to warrant a more definite classification. Further records may show that the Pied Wheatear (*Enanthe picata*), which I met twice, is a winter visitor. The Golden Eagle (*Aquila chrysaetus*), noticed only once, may prove to be the same. I think the White-bellied Drongo (*Dicrurus caerulescens*) which was observed on only two occasions, in February and in March, may be found to be a passage migrant. As to the others, there is nothing as yet to point to their being anything but vagrants. Among them were a Brown Flycatcher (*Muscicapa latirostris*) seen in a garden, a Black-headed Bunting (*Emberiza melanocephala*) noticed among a flock of the Red-headed species and a Mottled Wood-Owl (*Strix ocellatum*). Two birds, a Gold-fronted Chloropsis (*Chloropsis aurifrons*) and a Chestnut-bellied Munia (*Munia atricapilla*) were perhaps not even vagrants but escapes. The Chloropsis frequented a garden throughout August and September and, during this period, was to be found regularly perched at the top of a tall leafy tree often indulging in short bursts of song. The Chestnut-bellied Munia, a male bird, was seen on two successive weeks at the end of June and the beginning of July feeding on seeding grasses with a party of Striated Weaver-birds.

ROOSTING NOTES

Among the features of Delhi bird-life are its large scale gregarious roosts centred to a great extent on the city itself. Kites, Crows, Parrakeets and Common Mynahs all come into large roosts every evening and fly out the following morning. They do this throughout the year, even during the breeding season, although in much reduced numbers then. Most of these birds, which roost in the trees and shrubberies of the Delhi gardens, feed outside the built-up area. The Crows and the Parrakeets range ten miles out at least. The daily fly-out from the roost is a most regular affair by suntime and only when the sky is very overcast is the schedule likely to be delayed. First to move are the Kites sailing forth silently in the half light of the dawn, then the Crows flying more hurriedly and cawing, whilst the Mynahs and Parrakeets both wait until it is fully light. On the return flight I thought that the Crows coming into Delhi followed the tree-lined roads in preference to cutting across the open country. Flocks would fly to a road and then turn along

it. These birds would fly at about tree-top level or just below, often weaving in and out amongst the trees. The fast flying Parrakeets did not adopt the practice, nor did the Mynahs.

Some of the roosts seemed almost permanent. At any rate they were in use more or less continuously throughout the period of my watching. Where a shift of roosting quarters did occur, the change was traceable to some outside interference, usually disturbance by war-time building operations. The Crows were particularly susceptible to this and moved their roosting places more than once, although not out of Delhi. The only really large and regularly used roost I knew, up beyond the built up area, was on the golf links. Strips of indigenous woodland had been left between the fairways and round the edge of the course, and this woodland abounded in thickets of thorny evergreen caper (*Capparis sepiaria*) which afforded excellent protection from Owls and other night predatory birds. Thousands of Common Mynahs took advantage of this. Most of these birds seemed to come to the roost from the south and, as sunset drew near, they would be met working towards their sleeping quarters across an area of scrub and waste land. They advanced leisurely with much sitting about. Parties of Mynahs would gather in trees for a while, or alight and feed on the ground. Rarely did any band fly direct to the roost from a distance. The final fly was made from the immediate vicinity of the roost, from a telegraph wire which ran along its south side or from neighbouring trees. All these places became more and more crowded as the roosting time approached. But even the last fly-in did not take the birds into the thickets. Always the Mynahs halted in the tree-tops. The chattering at this stage was tremendous, and lasted whilst the birds were dropping down into the thickets below the trees and securing their perches for the night.

Thickets rather than trees were very generally preferred as roosting places. It seemed to matter little whether a thicket was high or low, whether it formed a large concentrated block or was broken up into a number of separated sections. The real criterion probably was density. This would explain the popularity of the bamboo clumps which grow in so many of the New Delhi gardens, usually one clump to a garden. Common Mynahs took possession of numbers of these clumps and so crowded into them that there could not have been much room left for other birds. But outside the areas frequented by the Mynahs, a clump would often accom-

moderate a wide variety of species. There was one I knew which housed some two dozen King-Crows, a party of Large Grey Babblers, a number of Ring-Doves and several Bulbuls. The King-Crows would begin arriving half an hour or more before sunset. They came in ones, twos and threes, at irregular intervals, flying in presumably from their various hunting pitches in the open country beyond the garden. Arrived at the clump, they would perch first on some bamboos which over-towered the rest. As many as eight of the birds might collect, one above the other, on a single swaying stem where for a while they would preen and utter their 'hartzibeeb-har-tzibeeb' call. Then, about sunset, these King-Crows would peel off from their perches, one by one, and dive down and disappear into the depths of the clump. Meanwhile the other roosters would have been flying from the surrounding shrubberies and, by the time the last King-Crow had dropped below, the whole community would be settled for the night.

NESTING

The peak period of the nesting season extends from April to July, but nests are to be found in almost every month of the year. The sequence, broadly speaking, is Vultures and the larger birds of prey during the winter months followed, as the weather grows warmer, by the smaller birds of prey, the Shrikes and other species which commonly find food for their young in relatively open spaces, and then during the rains by those birds dependent upon the greatly increased insect and aquatic life which accompanies the monsoon. Among this last group are most of the Storks and Egrets as well as gregarious nesters such as the Baya Weaver-bird which must need vast numbers of grasshoppers and the like to satisfy their nestlings. In the pre-monsoon period, roughly from April to June, riverain birds have their nests: the sandbanks they occupy are under water later.

Little can be said about nesting behaviour, for it was impracticable to keep nests under close observation. One or two matters are perhaps worthy of mention, although it has to be emphasised that they were by no means fully explored. I noticed that there was little uniformity in the length of time spent in their breeding areas by the various summer visitors. The two extremes were the Koel, which stayed in the Delhi area for about eight months, and the Pied Crested Cuckoo which was not there for more than five. None of the other summer visitors remained so long as the Koel nor, I think,

were any as quick as the Pied Crested Cuckoo. The Koel's arrival early in March was at least three months before its hosts, the House Crows had begun to build their nests, but the Pied Crested Cuckoo must have started laying almost as soon as it came, for its fledglings were abroad with their foster parents before mid-August just as soon as the young Koels. Why did the Koels come so early? Do they go south merely to escape cold weather and return as soon as the temperature rises? If this is the case, the breeding urge could have played no part in the migration. There is some support for this possibility in the fact that south of Delhi the Crows would be nesting considerably earlier. In Bombay they are perhaps a month ahead, and in Calcutta as much as three. Had the Koel been ready to breed, one would not have expected it to move away from the nesting Crows. Between the lingering Koel and the hurrying Pied Crested Cuckoo, the Golden Oriole may be quoted as spending the average time in Delhi. Arriving during the first week in April, many of the males had taken up their whistling perches by the middle of that month, and in May they were paired. Nesting had begun by the beginning of June and by mid-October the last Golden Oriole had gone—a stay of about six months, compared with the Koel's seven months or more and the Pied Crested Cuckoo's four and a half.

One of the species most easily satisfied in the matter of nesting sites is the Common Mynah (*Acridotheres tristis*). Trees and buildings serve it equally well: all it seeks is a large enough cavity, natural or artificial. And it is quick to take advantage of fresh opportunities. A series of street lamps, where glasses had been broken and left unrepaired for a season were everyone of them taken over by Common Mynahs. Almost the only preference indeed which the species shows is a liking for the proximity of man. This catholic taste in nesting and ability to live amongst human folk must be important factors in the Common Mynah's struggle for survival. In Delhi, at any rate, this Mynah is successful for it is probably the most numerous of any species there. None of the other Mynahs are so impartial, nor are they as numerous. The Bank Mynahs (*Acridotheres ginginianus*) come next. This species, unlike the other, is very specialised in nesting requirements, seeking always a vertical face in an easy soil. Suitable sites occur frequently along the banks of the Jumna and its canals, in the borrow-pits which abound and in the many unlined shallow wells dug for temporary irrigation. There is no sign that the supply of possible sites is in any way

inadequate. The Bank Mynah's restricted choice of nesting site probably does not limit the numbers of these birds, although it tends to localize their distribution. The only departure from the typical nesting sites which I saw was that of a colony which had occupied the weepholes in the brickwork of a railway culvert. Of the other two Mynahs on the Delhi list, the Pied Mynah (*Sturnopastor contra*) is limited less by peculiarities in nesting requirements than by its desire for moist feeding grounds, whilst the Brahminy Mynah (*Temenuchus pagodarum*) which nests if it can in a hole in a tree rather than one in a building faces keen competition, and if one can judge from the numerous quarrels and evictions, probably finds the supply of holes inadequate. Certainly the Brahminy Mynah, though occurring widely over the Delhi area, is nowhere very numerous.

Among the non-gregarious species, the Indian Robin (*Saxicoloides fulicita*) is one of the most common, and its range of nesting site is as wide as that of the Common Mynah. The Robin will build on the ground and in crevices of trees and buildings up to a considerable height. I have found it sitting in the old nest of a Red-rumped Swallow to which it had gained entrance through a break in the chamber wall and, also, in what may have been a Bulbul's nest in a small thorn bush. The height at which a nest is placed does not seem to be a factor of much significance. The Red-vented Bulbul's nest may be at any height from two feet to 50 and the Golden Oriole must have just as wide a range although at generally higher levels. More important than height probably is adherence to a particular position linked very often with a special type of nest. This was well illustrated by the Golden Oriole whose nest was always in the same general situation slung on the outer twigs of a leafy tree. The bird showed a marked preference for the neem (*Azadirachta indica*) which has been extensively planted along the roadsides and elsewhere in Delhi.

The dominant tree in the area is still the indigenous babool (*Acacia arabica*). It provides nesting sites for a high proportion of Delhi birds including the Bay-backed Shrike (*Lanius vittatus*) which was not included among the ten commonest species, but is easily the most plentiful of the Shrikes and a very prominent figure in babool country. This Shrike nests alike in woodland, parkland and scrub, preferring smallish trees with orchard-like density, avoiding only the very open country and tracts of cultivation where trees are few

and far between and which is more the domain of the Great Grey Shrike. The typical nest of the Bay-backed Shrike is a substantial and not very tidy cup with wool or some similar material figuring conspicuously on the outside. The nest is placed in a babool at no great height and usually against a main stem. Almost invariably the owners give away its existence. If one of the pair is sitting, the other is sure to be perched close by and will catch the eye. When there are nestlings the parents become most demonstrative, and do not let anyone come near without displaying their anxiety so obviously that it is only a matter of minutes before the nest is found. For quite three weeks, maybe for longer, after leaving the nest the youngsters remain with their parents learning the art of feeding. Most of the time is spent close to the nesting tree, and although the fledglings gradually extend their daily wanderings, they come back to roost close to the tree where they were hatched. Teaching is by example. One of the parents arrives with a grasshopper and starts eating it whilst a youngster looks on. Presently, the latter takes the food and eats it itself. The earliest fledglings I saw about were in the last week of April, and young birds apparently hunting on their own became noticeable in early June. It was at about this time that the old birds began nesting again, although once or twice it seemed that the second laying was begun whilst the first brood still hung about to be fed. The first nest is not used a second time, but there is a tendency to build in the same locality and often within a few yards of the old site.

Some species which are otherwise gregarious scatter widely for their nesting. The House Crows and the Green Parrakeets have already been mentioned; others are the Pariah Kites and the Common Mynahs. Now and again, where a number of suitable nesting sites exist close together, there may be some form of colonial nesting, but in general it is an affair of individual pairs. The Babbler bands however retain their association. Most of these bands have fairly definite territories over which they range throughout the year, and in the case of the Large Grey Babbler (*Argya malcolmi*) it seemed that nesting took place within the territory. My impression, too, was that the breeding pair did not entirely leave the band. The couple would do the actual building of the nest, although I several times saw a bird with material in its bill being accompanied by some of its followers. If a sitting bird is disturbed, it will usually fly to the band which is probably nearby and which at once sets up a

clamour. At one nest which I visited on several evenings during the incubating period, the sitter's mate would fly up from the band as the latter went by the way to roost and perch for the night on a twig just below the nest. Fledglings when they leave the nest apparently join the band at once. I never saw any alone with their parents. Presumably youngsters with the band would be fed by any member. This certainly seemed the practice with young Pied Crested Cuckoos and the Common and Jungle Mynahs which were fostering them.

Once I saw a band of Large Babblers feeding nestlings. It was a late brood hatched in a nest in a small zizyphus tree in a cultivation patch. There were two well feathered youngsters easily visible from the ground, because the sides of the nest had been flattened down. I could see the Babbler band in the vicinity and presently an adult arrives with food, feeds one of the nestlings and then settles to brood both of them. But a second Babbler, also with food, flies up as well as two others who have nothing. After a pause the bird on the nest leaves and the new comer feeds the nestlings. Two more adults bring food, but the youngsters are not hungry and one of the old birds perches by the nest with the food in its bill. Yet another Babbler comes with food and after it two more. At one time there were five adults with food in the tree, and I saw three of them on the nest together feeding the young birds. No wonder the nest was flattened.

HABITAT

Delhi as a bird habitat is dominated by the babool (*Acacia arabica*). These trees, probably plentiful in the days before the building of the new city, seem to have benefitted by the development of the past 30 years. Not only have individual trees grown to greater sizes, thanks to the more ample supplies of water which the ever extending irrigation has provided, but there has been a considerable amount of planting of babool in belts along canals and railways for protective purposes. Whether these favourable conditions will persist is open to doubt. It may be that the peak of the babool's prosperity is past already. More ornamental trees will replace it in the gardens, it will disappear from the waste lands as these are taken into cultivation and, the goats debarred from so many of their former feeding grounds, will be more than ever destructive to it. It looks as if the days of the babool as a sizeable tree were numbered. Similarly, the two capers, *Aphylla* and *Sepiaria*, both found principally in the waste

lands and in neglected woodland, are likely to diminish as more of the country is reclaimed. The disappearance of the babool would materially affect many of the Delhi birds. The three Shrikes for instance, the Great Grey Shrike (*Lanius excubitor*), the Bay-backed Shrike (*Lanius rittatus*) and the Rufous-backed Shrike (*Lanius schach*) all seem singularly dependent upon this tree for nesting, roosting and resting as well as for perches from which to watch for prey on the ground below. The Great Grey Shrike might find a partial substitute in the date palm, the Rufous-backed Shrike will use tall bushes and reeds as look-out posts and the Bay-backed Shrike commonly perches on telegraph wires. But these alternatives could not fully replace the babool. As this disappears, so too in all probability will the majority of the Shrikes; if any adapt themselves to the new conditions it is most likely to be the Bay-backed Shrikes.

Far reaching, too, would be the effects of the loss of the caper. This leafless shrub which now grows in abundance around Delhi is closely linked with many birds. It fruits twice a year, and the pink cherry-like berries it bears do not fall as they ripen but remain hanging on the bush thus providing a long continuing food supply. The Brahminy Mynah (*Temenuchus pagodarum*) feeds very largely upon them. In fact, throughout the non-breeding season, the caper shrub is the most likely place to find this bird. Probably it roosts as well as feeds there. Undoubtedly, too, this caper harbours a rich insect community. Many small birds, notably the Lesser White-throat (*Sylvia curruca*) and the Rufous-fronted Wren-Warbler (*Franklinia buehanani*) search its tangled maze of twigs most industriously. In the following season Purple Sunbirds (*Cinnyris asiaticus*) figure prominently amongst the caper's visitors. They do not come only for food, but also seeking material for their nests. Pieces of down, gossamer-like threads and similar stuffs, blown about by the breeze are caught by the small thorns along the caper twigs. Almost every caper bush carries a plentiful supply conveniently hung up for the Sunbirds to take away. The female who does the building will make a couple of trips a minute. She only takes a few seconds, five to eight perhaps to poke the material into place; all the rest of the time she is flying to and fro.

The thorny caper (*Sepiaria*) also plays an important part in the bird environment. During its fruiting season which is comparatively short, extending over some three weeks in August, numbers of Rosy

Pastors, Mynahs and Babblers come to the thickets to feed, but its role throughout the greater part of the year is to provide safe roosting places. The Mynah roosts have been mentioned. There were other *Sepiaria* thickets into which Bulbuls and a variety of small birds poured nightly. One thicket I knew, draped in a manner very typically of this caper about a babool, was the home for more than two years of a couple of Collared Scops-Owls (*Otus bakkamæna*): protection from light rather than from predators was presumably what they sought.

There are many other trees and shrubs important to the birds. The berries of *Salvadora persica* attract flocks of Common Mynahs, Bank Mynahs, Rosy Pastors and Crows as well as Babblers, Bulbuls, Yellow-throated Sparrows and many more. Another favourite is a cordia whose clusters of orange coloured fruits are abundant in April. Nearly always throughout the year some indigenous tree or shrub provides the birds with food, if not its own fruits, then in the shape of insects attracted to its flowers. And as this indigenous vegetation disappears or is reduced by constant and concentrated grazing to diminutive stature, one or other of which fates seems likely as the development of Delhi proceeds, so there will be changes in the bird population. Some species no doubt will be able to adapt themselves to the new conditions. They even find them advantageous. The wide-ranging Parrakeets, for instance, which are quick to locate and raid a ripening crop may find the increasing cultivation beneficial. Many of the trees newly planted in the Delhi gardens suit their tastes admirably as does the wheat which is being grown on former waste lands. For insect feeders, too, the development of the land may mean more food. But as gardens and crops replace the present waste land, Delhi will become a much more uniform bird habitat than it is today. The few small jheels, with permanent water which still remain, and the last reed-beds will almost certainly go as well as the indigenous woodlands. With this growing uniformity of habitat the present variety of bird-life must diminish. The fact that more than a 100 different species are to be seen now in the course of a single walk is due to the many types of habitat which are traversed.

H. W. HUTSON.

ADDITIONAL NOTE ON MIGRATION

Further observation in recent years seems to modify General Hutson's opinion of the extent of migration passing through Delhi. The migration is most noticeable near the river and a large part of New Delhi is perhaps outside the main line of migration. Year by year, in addition to the Rosy Pastors and Red-headed Buntings, great quantities of Wagtails, White, Yellow and Yellow-headed may be seen. In March or April, soon after dawn and towards dusk, flock after flock of Wagtails passes north over Old Delhi. At the same time of year, scrub near the river may be alive with Bluethroats, Lesser Whitethroats, Booted Warblers and other small birds of passage. Smaller numbers of Swallows (several species), Larks, Pipits, Drongos, Hoopoes, Bee-Eaters, Red Turtle-Doves and other species can also be seen at this time of year passing northward. Wherever there are suitable portions of wet mud by the river itself, quantities of Stints (Little and Temminck's), Sandpipers (Wood, Marsh and Green), Ruffs and other waders can be found, the composition of the flocks changing from day to day. Occasional Gulls and Terns (including Gull-billed, Common and Whiskered) also use this route. Sometimes flights of Duck or Geese or Cranes may be seen winging their way northward.

The autumn migration is similar. At this season the movement of Swallows (*Hirundo rustica*) is usually much more pronounced. Certain Warblers, such as the Greenish Willow-Warbler and the Great Reed-Warbler are much more abundant in autumn than in spring. On the other hand, the Greyish Willow-Warbler appears on the Ridge in small numbers every spring, but has not been noticed in autumn.

A river flowing north and south nearly always provides a flight-line for migrating birds. The Jumna seems to be no exception.

H. G. ALEXANDER.